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Melody A. Jones 44,175  
Name of Attorney Registration No.  
Signature of Attorney

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P&G Case 7526M6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of Villagran et al. : Confirmation No. 4754  
Serial No.: 09/533,644 : Group Art Unit: 1761  
Filed April 20, 2000 : Examiner: Corbin, A.  
For: DEHYDRATED POTATO PRODUCTS

**BRIEF ON APPEALS**

Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Enclosed, pursuant to 37 C.F.R. 1.192(a), is Appellant's brief on Appeal for the above application. The Brief is being forwarded in triplicate.

Please charge the fee of \$320.00 pursuant to 37 C.F.R. 1.17(c) to Deposit Account No. 16-2480 for the filing of the brief in support of an appeal. The Commissioner is also authorized to charge any additional fees which may be required to this account. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

By Melody A. Jones  
Melody A. Jones  
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Date: July 25, 2003

Customer No. 27752

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**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2233-1450

Dear Sir:

Applicants hereby appeal to the Board of Appeals the decision of the Examiner finally rejecting Claims 1-45. A response to the final rejection dated 02/03/2003 was not filed.

**Real Party in Interest:**

The real party in interest is the Procter & Gamble Company, assignee of Appellants' entire right, title, and interest in the invention at issue.

**Related Appeals and Interferences:**

Appellants, Appellants' legal representative, and Appellants' assignee are not aware of any other appeals or interferences which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal, other than the following: (1) Case 7526M2, Serial No. 09/552,952, "Method for Preparing Dehydrated Products," Notice of Appeal filed 4/30/03, Appeal Brief filed 6/30/03; (2) Case 7526M3, Serial No. 09/553,643, "Method for Preparing Dehydrated Products," Notice of Appeal filed 3/24/03, Appeal Brief filed 6/11/03; and (3) Case 7526M5, Serial No. 09/553,894, "Method for Preparing Dehydrated Products," Notice of Appeal filed 4/30/03, Appeal Brief filed 6/30/03.

**Status of Claims:**

Claims 1-45 are pending in the case and are the subject of this appeal.

**Status of Amendments:**

No amendments have been filed subsequent to the final rejection.

**Summary of Invention:**

The present invention provides dehydrated potato products comprising Vitamin C. The dehydrated potato products have an average Vitamin C Retention Rate of at least about 7% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed. In addition, the dehydrated potato products have a Relative Absorbance Index of less than about 1.5. (Specification, p.7)

The present invention also provides potato flakes having substantially less heat generated volatile compounds than conventional flakes. These flakes have a Reduction Ratio of greater than about 2, for the compounds 3-Methyl-Butanol, 2-Methyl-Butanol, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, Phenylacetaldehyde, and Ethyl Pyrazine. The lower the volatile composition in the flakes, the higher the flavor composition for the finished product or snack. Mashed potatoes prepared with the flakes of the present invention show cleaner and more potato flavor than conventional flakes. (Specification, p. 44-45)

**Issue:**

Whether Claims 1-45 are patentable under 35 U.S.C. §103(a).

**Grouping of Claims:**

Claims 1-45 stand or fall together.

**The Argument:**

**Claims 1-45 are patentable under 35 U.S.C. §103(a).**

**Claims 1-40:**

Claims 1-40 are rejected under 35 U.S.C. §103(a). Claims 1-10, 15, 21-25, 31-35 are rejected as unpatentable over Pulley or Hammes. Claims 11, 14, 18, 26-30, 36-38 are rejected as unpatentable over Pulley or Hammes in view of Guadagni. Claims 16 and 17 are rejected as unpatentable over Pulley or Hammes in view of Villagran or Hamann, and Claims 12, 13, 19, 20, 39 and 40 are rejected as unpatentable over Pulley or Hammes in view of Guadagni and further in view of Villagran or Hamann.

Independent Claim 1, and all other rejected claims which are dependent therefrom (2-10, 15-17, 21-25, 31-35) and Claim 11 and the Claims depending therefrom (12-14, 18-20, 26-30, 36-

40) all require, *inter alia*, an average Vitamin C Retention Rate of at least about 7% relative to the Vitamin C initially present in the potato material from which the dehydrated potato are formed.

To establish a prima facie case of obviousness, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); MPEP §2143.03. Thus, in the present case, the Examiner must show that the art teaches or suggest, a dehydrated potato product that has an average Vitamin C Retention Rate of at least about 7% relative to the Vitamin C initially present in the potato material from which the dehydrated potato are formed. This the Examiner has not done. Therefore, it is improper for the Examiner to conclude that it would have been obvious to have Vitamin C Retention Rates as claimed in dehydrated potato products.

The Examiner wrongly bases his argument on Pulley and Hammes and states that “[b]oth patents disclose dehydrated potato products, e.g. granules or flakes, including vitamin C. In the absence of unexpected results it would have been obvious to select any vitamin C retention rate and Vitamin C concentration simply depending upon desired results, personal preferences and consumer appeal.” (10/9/01 Office Action, p.3)

Both Pulley and Hammes are directed to methods for **adding** additional Vitamin C to food products. Pulley relates to fortifying dehydrated potato products with stable Vitamin C (See, e.g., Title of the Invention; Column 1, lines 1-10; Column 2, lines 31-34; Claim 1) by spraying a particular solution comprising Vitamin C onto the surfaces of dehydrated potato products. (Abstract; Examples 1-3; Claim 1) The process of Hammes involves applying a vitamin-containing coating comprising Vitamin C to food products such as potato flakes (See, e.g., Title of the Invention; Column 1, lines 18-21, 31-40) by dusting the coating onto the food products. (Abstract; Examples 5-6; Claim 1) The mere fact that Pulley and Hammes disclose dehydrated potato flakes “including vitamin C” does not provide sufficient basis for concluding that the present invention is obvious in view of these references. Neither reference teaches or suggests dehydrated potato products having an average Vitamin C Retention Rate, much less the average Vitamin C Retention Rate required by the present invention.

The current invention uses enhanced cooking and significantly shorter cooking residence times, leading to improved product quality. (Specification, p. 3, line 36—p.4, line 2; see also at p.4, line 31-p.5, line 5) The potato flakes produced by the processes of the present invention **retain more** Vitamin C from fresh potato when compared to potato flakes produced by conventional methods. Conventional processes for dehydrating potatoes require long cooking times, leading to the degradation of vitamins. (Specification, p.3, lines 18-24) No Vitamin C needs to be added after processing to achieve the levels presently claimed. The cited references, however, do not teach or suggest dehydrated potato products which have **retained** any specific level of Vitamin C. Instead, the cited references focus on separately **adding** Vitamin C to the

dehydrated product after processing. Therefore, the Examiner's rejection is without merit and should be withdrawn.

Similarly, cited references Villagran, Guadagni, and Hamman have not been shown to teach or suggest all claim limitations of the current invention. There is no disclosure in any cited reference that teaches or suggests **retaining** any level of Vitamin C in dehydrated potato products during processing.

Obviousness can only be established by modifying reference teachings to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP §2143; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988; *In re Jones*, 958 F.2d 347, 21 USPQ2d 1491 (Fed. Cir. 1992). In the present case, the Examiner has not identified any teaching, suggestion, or motivation, or knowledge in the art that would motivate one to modify the references to arrive at the claimed Vitamin C retention rate.

Moreover, because the references neither recognize that Vitamin C can be **retained** from the original product nor teach or suggest how to obtain a dehydrated product having the required Vitamin C Retention Rate, one would not reasonably expect that the claimed invention would result from modifying the references. Claims may be rejected only when there is a reasonable expectation of success that the claimed invention will result. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

**Claims 41-45:**

Claims 41-45 have been rejected under 35 U.S.C. 103(a). Appellants respectfully submit that this rejection is improper because the Examiner has not met his burden of establishing a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness under 35 U.S.C. 103(a) all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974); MPEP §2143.03. Claims 41-45 require dehydrated potato products having specific Reduction Ratios for various volatile flavor compounds. Specifically, Claim 41 requires a Reduction Ratio of at least about 2 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, Phenylacetaldehyde, and Ethyl Pyrazine. Claim 42 requires a Reduction Ratio of from about 2 to about 40 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, and Phenylacetaldehyde; dependent Claim 43 requires that this Reduction Ratio be from about 2 to about 10. Claim 43 requires a Reduction Ratio of from about 2 to about 50 for Ethyl Pyrazine; dependent Claim 45 requires that this Reduction Ratio be from about 2 to about 20. Thus, to establish a *prima facie* case of obviousness, the Examiner has to establish that

the references teach, suggest, or motivate one to arrive at the dehydrated potato products having the specified Reduction Ratios and flavor compounds. Since the Examiner has not met this burden his findings should be reversed.

The present invention specifically teaches that no flavoring compounds need to be added in order to achieve good potato flavor. Appellants have found that the lower the concentration of these volatiles in the dehydrated potato product, the higher the flavor of the finished product or snack. (Specification, p.44, lines 21-23) In fact, mashed potatoes prepared with the flakes of the present invention showed cleaner and more potato flavor than those prepared with conventional flakes. The products of the present invention have a **reduction** in undesirable processed flavor compounds in comparison to the levels found in conventional products. (Specification, p. 44, lines 27-29; page 46, Table 7) In order to establish a *prima facie* case of obviousness in the present case, it must be shown that the cited references teach or suggest dehydrated potato products that have a **reduction** in the level of volatile flavor compounds in comparison to conventional products, as indicated by the required Reduction Ratios.

There is nothing to indicate that any of the cited references (Pulley, Hammes, Villigran, Hamman, or Guadagni), contemplate **reducing** the level of the compounds specified in Claims 41-45, much less **reducing** them to achieve the required Reduction Ratios. In fact, the cited references teach away from the present invention. Pulley does not disclose having any particular level of flavor, much less having a particular **reduction** ratio of volatile flavor compounds. Villagran teaches **addition** of flavorings. Hammes does not even disclose how to make dehydrated products or discuss flavoring of potato products, but instead focuses on coatings for food particles. Hamman teaches the **addition** of artificial flavoring. Guadagni teaches the **addition** of a flavoring agent containing various volatile flavor compounds to dehydrated potato products. None of the cited references recognize that a **reduction** in the specified volatile flavor compounds will lead to dehydrated potato products having a less processed, less brown, cleaner, enhanced potato flavor.


Thus, because the references do not teach or suggest the claimed invention, there is no suggestion for modifying reference teachings to produce the claimed invention. Furthermore, references may be modified to reject claims as *prima facie* obvious only if there is a reasonable expectation of success that the claimed invention will result. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Because the references do not recognize that dehydrated potato products having a more desirable flavor can be produced by **reducing** the levels of certain compounds, but rather either teach that levels should be **increased** or do not teach potato products with a particular flavor at all, one would not reasonably expect that modifying the references to arrive at the claimed invention would produce dehydrated potato products with improved flavor.

**Conclusion:**

For the reasons set forth above, Appellants submit that the Examiner has not established the prima facie case of obviousness and that the present invention is patentable over the cited references. Accordingly, reversal of the Examiner's findings of unpatentability is respectfully requested.

Respectfully submitted,

For: Villagran et al.

By    
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Date: July 25, 2003

Customer No. 27752

**Appendix**

1. (Amended) Dehydrated potato products comprising Vitamin C:
  - a) wherein the dehydrated potato products have an average Vitamin C Retention Rate of at least about 7% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed; and
  - b) wherein the dehydrated potato products have a Relative Absorbance Index of less than about 1.5.
2. Dehydrated potato products according to Claim 1, having an Average Vitamin C Retention Rate of at least about 15%.
3. Dehydrated potato products according to Claim 1, wherein said dehydrated potato products have a color corresponding to a "L" value greater than about 78 Hunter units.
4. Dehydrated potato products according to Claim 1 having a "b" value less than about 21 Hunter units.
5. Dehydrated potato products according to Claim 4 having an "a" value of from about -1 to about -3 Hunter units.
6. Dehydrated potato products according to Claim 1 having a total pore area of from about 3 to about 3.8 sq.m/g.
7. (Amended) Dehydrated potato products according to Claim 1, wherein less than about 70% of the potato cells of said dehydrated potato products are broken.
8. Dehydrated potato products according to Claim 1, having a peak viscosity of from about 60 to about 400 RVA.
9. Dehydrated potato products according to Claim 8, having a final viscosity of from about 40 to about 200 RVA.



10. Dehydrated potato products according to Claim 1, wherein said dehydrated potato products comprise from about 3 mg Vitamin C/100mg potato solids to about 30 mg Vitamin C/100 g potato solids.

11. (Amended) Dehydrated potato products comprising Vitamin C:

- a) wherein the dehydrated potato products have an Average Vitamin C Retention Rate of at least about 7% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed;
- b) wherein the dehydrated potato products have a color corresponding to a "L" value greater than about 78 Hunter units;
- c) wherein the dehydrated potato products have less than about 70% broken cells;
- d) wherein the dehydrated potato products comprise from about 0.1 to about 0.3 ppm of 2-methylpyrazine; and from about 0.3 to about 1.5 ppm of phenylacetaldehyde, and from 0.1 to 0.6 ppm of methional; and
- e) wherein the dehydrated potato products have a free amylose content of from about 20 to about 38%.

12. (Amended) A dough made from the dehydrated potato products of Claim 11, wherein said dough has a modulus of elasticity ( $G'$ ) from about 15000 to about 90000 Pascals; and a viscosity modulus ( $G''$ ) from about 3000 to about 15000 Pascals.

13. (Amended) A dough made from the dehydrated potato products of Claim 11, wherein said dough has a sheet strength from about 80 to about 450 gf.

14. (Amended) Mashed potatoes made from the dehydrated potato products of Claim 11, wherein the mashed potatoes have a firmness from about 700 gf to about 1800 gf.

15. A food product made with the dehydrated potato products of Claim 1

16. A potato snack product made with the dehydrated potato products of Claim 1.
17. The potato snack product of Claim 16, wherein said dehydrated potato products are selected from the group consisting of potato flakes, potato flannels, potato granules, and mixtures thereof.
18. A food product made with the dehydrated potato products of Claim 11.
19. A potato snack product made with the dehydrated potato products of Claim 11.
20. The potato snack product of Claim 19, wherein said dehydrated potato products are selected from the group consisting of potato flakes, potato flannels, potato granules, and mixtures thereof.
21. Dehydrated potato products according to Claim 1, wherein said dehydrated potato products have a Reduction Ratio of at least about 2 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, Phenylacetaldehyde, and Ethyl Pyrazine.
22. Dehydrated potato products according to Claim 1, wherein said dehydrated potato products have a Reduction Ratio of from about 2 to about 40 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, and Phenylacetaldehyde.
23. Dehydrated potato products according to Claim 1, wherein said dehydrated potato products have a Reduction Ratio of from about 2 to about 50 for Ethyl Pyrazine.
24. Dehydrated potato products according to Claim 22 having a Reduction Ratio of from about 2 to about 10.
25. Dehydrated potato products according to Claim 23 having a Reduction Ratio of from about 2 to about 20.
26. Dehydrated potato products according to Claim 11, wherein said dehydrated potato products have a Reduction Ratio of at least about 2 for a volatile flavor compound selected from

the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, Phenylacetaldehyde, and Ethyl Pyrazine.

27. Dehydrated potato products according to Claim 11, wherein said dehydrated potato products have a Reduction Ratio of from about 2 to about 40 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, and Phenylacetaldehyde.

28. Dehydrated potato products according to Claim 11, wherein said dehydrated potato products have a Reduction Ratio of from about 2 to about 50 for Ethyl Pyrazine.

29. Dehydrated potato products according to Claim 27, having a Reduction Ratio of from about 2 to about 10.

30. Dehydrated potato products according to Claim 28, having a Reduction Ratio of from about 2 to about 20.

31. (Amended) Dehydrated potato products according to Claim 1, wherein the dehydrated potato products have an average Vitamin C Retention Rate of at least about 15% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed.

32. (Amended) Dehydrated potato products according to Claim 31, wherein the dehydrated potato products have an average Vitamin C Retention Rate of at least about 30% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed.

33. (Amended) Dehydrated potato products according to Claim 7, wherein less than about 40% of the potato cells of said dehydrated potato products are broken.

34. Dehydrated potato products according to Claim 8, having a peak viscosity of from about 85 to about 400 RVA.

35. Dehydrated potato products according to Claim 9, having a final viscosity of from about 60 to about 155 RVA.

36. (Amended) Dehydrated potato products according to Claim 11, wherein the dehydrated potato products have an Average Vitamin C Retention Rate of at least about 15% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed.

37. (Amended) Dehydrated potato products according to Claim 36, wherein the dehydrated potato products have an Average Vitamin C Retention Rate of at least about 30% relative to the Vitamin C initially present in the potato material from which the dehydrated potato products are formed.

38. (Amended) Dehydrated potato products according to Claim 11, wherein the dehydrated potato products have less than about 40% broken cells.

39. (Amended) A dough made from the dehydrated potato products of Claim 11, wherein said dough has a modulus of elasticity ( $G'$ ) from about 35000 to about 55000 Pascals; and a viscosity modulus ( $G''$ ) from about 5000 to about 10000 Pascals.

40. (Amended) A dough made from the dehydrated potato products of Claim 11, wherein said dough has a sheet strength of from about 110 to about 240 gf.

41. Dehydrated potato products having a Reduction Ratio of at least about 2 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, Phenylacetaldehyde, and Ethyl Pyrazine.

42. Dehydrated potato products having a Reduction Ratio of from about 2 to about 40 for a volatile flavor compound selected from the group consisting of 3-Methyl-Butanal, 2-Methyl-Butanal, Di-Methyl-Disulfide, Di-Methyl-Trisulfide, Methional, and Phenylacetaldehyde.

43. Dehydrated potato products having a Reduction Ratio of from about 2 to about 50 for Ethyl Pyrazine.

44. Dehydrated potato products according to Claim 42, having a Reduction Ratio of from about 2 to about 10.

45. Dehydrated potato products according to Claim 43, having a Reduction Ratio of from about 2 to about 20.